VoIP-based Calibration of the DQX Model

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In the Internet Protocol (IP) ecosystem, Quality-of-Experience (QoE) is important information needed by Service Providers (SP) to improve their services. However, end-user's satisfaction, which can be reflected by QoE metrics, cannot be easily measured like technical variables, such as bandwidth and latency. QoE can either be estimated through mathematical models or it can be measured through an experimental setup. In this work a Voice-over-Internet Protocol-based (VoIP) QoE measurement setup has been designed to capture end-user's QoE in VoIP services. The data measured during these experiments are used to define all necessary parameters of the Deterministic QoE model (DQX) in this VoIP scenario. Such a calibration of the model is essential to adapt it to the particular service and its technical and non-technical conditions in which it is used. Furthermore, those DQX results achieved are compared with those results of the IQX Hypothesis and the E-Model, being proposed by the ITU-T. Thus, it is finally shown that DQX can capture more accurately end-user's QoE in VoIP scenarios.

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